Final Abstract Number: 40.062
Session: Virology and Viral Infections (Non-HIV)
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Poxvirus viability and signatures in historical relics

A. McCollum*, Y. Li, K. Wilkins, W. Davidson, C. Paddock, K. Karem, M. Reynolds, I. Damon

Centers for Disease Control and Prevention, Atlanta, GA, USA

Background: In 1980, The World Health Organization announced the eradication of smallpox. Anecdotal reports and formal scientific evidence have not removed the possibility that the virus may survive prolonged periods in preserved skin and tissue material, such as those on display at museums or unearthed human remains. Such historical tissue specimens and artifacts yield important information about the history of the disease and vaccination with other *Orthopoxviruses*; however, the absolute longevity of the poxvirus in these samples is not known.

Methods: We examined published and unpublished data from historical specimens, including six corpses with suspect lesions and material of three tissue crusts from either a suspect smallpox patient or a vaccination site. Data included virus viability, immunological assays, DNA extraction, and real-time polymerase chain reaction assays for specific *Orthopoxviruses*.

Results: For the 9 'cases', time of illness to testing ranged from 99 to 822 years. Live virus was not isolated from any of the corpse or crust specimens. *Orthopoxvirus* immunological activity was reported for tissue retrieved from two of the corpses. Non-variola *Orthopoxvirus* DNA was isolated or amplified from the tissue of one corpse and specimens from two of three crusts.

Conclusion: Historical specimens offer opportunities to delve into the past and capture a glimpse of an eradicated disease in history. The limited numbers of specimens available do not provide enough evidence to suggest that variola virus can or cannot survive long periods of time entombed in a corpse or dried in a crust. These investigations also highlight how historical specimens may help explain the history of smallpox epidemics and vaccine development with *Orthopoxvirus* species.

http://dx.doi.org/10.1016/j.ijid.2012.05.224

Type: Poster Presentation

Final Abstract Number: 40.063
Session: Virology and Viral Infections (Non-HIV)
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Styrylpyrone derivative (SPD) induce cell cycle arrest during Herpes Simplex Virus type-1 (HSV-1) infection

N. Md Nor[1,*], N. Ibrahim[2]

[1] *National University of Malaysia, Bangi, Selangor, Malaysia*
[2] *Universiti Kebangsaan Malaysia, Bangi, Selangor, Malaysia*

Background: HSV-1 is a causative agent for the common orolabial herpes infection, particularly in children. Emergence of HSV-1 resistant strain of current first line drug, Acyclovir (ACV) has been a DNA sequence, 3 and 5. Targetting this particular evasion mechanism, we have previously reported an anti HSV-1 activity by SPD, a pro-apoptotic compound from *Goniothalamus umbrosus.* Current study is focused on screening of the mechanism(s) ensuing this activity.

Methods: Plaque reduction method was used to validate antiviral activity of SPD on Vero cell. Differentially Expressed Gene (DEG) study was done using arbitrary primer from DEG kit (GeneFishing TechnologyTm). DEG(s) were cloned and sequenced, and validated by Real Time PCR. Microscopic observation done using confocal microscope.

Results: Treatment with SPD was found to reduce HSV-1 yield. Time course assay on effect of delayed treatment reveal that SPD targeted the early virus cycle. Delayed addition of treatment after HSV-1 infection affected the anti HSV-1 effect of SPD. Study on the effect of different length of treatment exposure reveals that 6 hours of treatment with SPD achieved more than 60 percent reduction of HSV-1 infection. In DEG analysis study, only infected cell treated with SPD (SPD-Virus) showed irregular expression of genes (mRNA) that is critical for membrane integrity (TIMP 1), cell cycle arrest (*lgals 1, mdm2* associated *p53*, *Ran*) from as early as 2 hours post-treatment. Non-infected cell treated with SPD (SPD only) and HSV-1 infected cell not treated with SPD (virus only) expression of this genes are comparable to untreated normal non-infected Vero cell (cell only). Findings from DEG were validated using real time PCR. Visualization of SPD-Virus cell under confocal microscope showed characteristic of cell undergoing apoptosis with membrane blebbing and cell shrinkage. Further investigation of the nuclei with DAPI showed pyknosis and ring condensation of the chromatin, characteristic of stage II apoptosis.

Conclusion: Current study suggested that SPD mechanism(s) of action is through induction of genes that promoted cell cycle arrest, resulting to apoptosis. Protein study is currently undergoing to confirm finding.

http://dx.doi.org/10.1016/j.ijid.2012.05.225

Type: Poster Presentation

Final Abstract Number: 40.064
Session: Virology and Viral Infections (Non-HIV)
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Opportunistic zoster non HIV-related

N. Como[1], E. Meta[2,*], D. Kraja[3], P. Pipero[4], A. Harxhi[5]

[1] *University Hospital Centre "Mother Theresa", Tirana, AL, Albania*
[2] *University Hospital Centre "Mother Theresa", Tirane, AL, Albania*
[3] *Faculty of Medicine, Tirane, Albania*
[4] *UHC, Tirane, AL, Albania*
[5] *UHC, Tirane, Al, Albania*

Background: Aim: Recognizing epidemiological and nozological aspects of opportunistic Zoster non HIV-related.

Material: Including 284 cases with zoster in subjects immunosuppress HIV negative, ages 14 – 72 years-old, followed up during 1990 till 2011.

Methods: Nominating herpes zoster opportunistic, the case where herpesvirosis appeared in conditions immunosuppressive unrelated with HIV.

Analyzed epidemiological data and nozological aspects conditional by refining them statistically.

Results: Of 284 cases with Zoster 67 (23.59%) were opportunistic forms of its unrelated with HIV.

From them 60.87% were male and 39.13% female.

Cases according to ages: 14-20 years old 2, 21-30 years old 13, 31-40 years old 14, 41-50 years old 9, 51-60 years old 12, 61-70 years old 15, 71 years old and over 7cases.

Distribution based on season: 19 in spring, 16 in summer, 17 in fall and 15 in winter.

Immunosuppressive causes:

- infectious in 6 cases: visceral *leishmaniasis* 3, TB 3 (pulmonary 2, meningitis 1);
- non infectious in 61 cases: tumors 25 (stomach-3, intestinal-2, liver-3, kidney-2, lungs-4, ovarian-2, breast-7, prostate-1, cervix-1), lymphoma 8 (Hodgkin 3, non Hodgkin 5), leukemia 2 (chronic myeloid -1, hair cell leukemia-1); aplastic anemia-2; cholagenosis 6 (SLE-2, RA- 4) , immunodefiçiens mixte 1; post transplanted condition 3 (kidney-2, mielotransplant-1); chronic pathologies 9 (arcoidosis-1, diabetes mellitus-3, hepatic cirrhozis-1, chronic renal insufficiency -1, cardiac insufficiency- 2 ,celiac diseases-1); immunosuppressive therapy 5

Conclusion:

a. Opportunistic Zoster unrelated with HIV was encountered in 23.59%.
b. Appeared often on males, 60.8% and ages 21 - 70 years old, 89.13%.
c. Noticed 29 conditions factor : 3 infectious, 14 tumors, 3 immune, 1 drugs, 2 after transplant, 6 in chronic pathologies.
d. In 26.86% of cases, zoster preceded unknown tumoral disease.

http://dx.doi.org/10.1016/j.ijid.2012.05.226

Type: Poster Presentation

Final Abstract Number: 40.065
Session: Virology and Viral Infections (Non-HIV)
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

Predictors of duration and degree of third space fluid accumulation in adult patients with dengue

R. Premaratna[1], A. Ragupathy[2], N. Miththinda[2,*], J. de Silva[1]

[1] *Faculty of Medicine University of Kelaniya, Ragama, Sri Lanka*
[2] *Colombo North Teaching Hospital, Ragama, Sri Lanka*

Background: Fluid leakage is the hallmark of dengue shock syndrome. It is important to identify clinical and biochemical parameters which predict duration and degree of fluid leakage in dengue.

Methods: 102 patients with confirmed dengue were prospectively followed up for clinical, haematological and biochemical parameters, and those were correlated with ultrasonographic evidence of third space fluid accumulation (TSFA).

Results: Of the 102 patients (52 males; mean age 28.3 years (SD 11.8), TSFA was detected in 34/95(36%) after hospital admission; 33/95 had pleural effusions which included all except one of 21/95 who had ascites. The majority of pleural effusions (72.7%) lasted 3 or more days and in most cases (52.4%) ascites lasted less than 3 days.

Duration of pleural effusion showed a significant positive correlation with severity of body aches (assessed on a visual analogue scale) (r=0.523, p=0.001), maximum percentage rise of PCV (r=0.526, p=0.001) and maximum percentage rise of Hb (r=0.525, p=0.001). It was negatively correlated with WBC count (r= -0.361, p=0.020) and platelet count (r= -0.585, p=0.000). There was no correlation with admission weight (p=0.125), duration of fever (p=0.387), lowest pulse pressure (p=0.299), ALT(p=0.241), AST(p=0.328), average fluid intake per day (p=0.118) and fluid balance per day (p=0.129).

The mean lowest WBC count of 3005/mm3 that was recorded for patients who developed bilateral pleural effusions (n=21) was significantly less (p=0.042) than the mean lowest WBC count of 4091/mm3 that was detected for unilateral effusions (n=12). There was no significant difference in other parameters between these 2 groups.

Duration of ascites was significantly positively correlated with highest AST (r=0.598, p=0.002) and highest ALT (r=0.721, p=0.000).

Conclusion: Severity of body aches on detecting effusions, maximum percentage rise of Hb and PCV, lower WBC and platelet counts seem to be associated with longer periods of TSFA. Among these, lower WBC counts appear to be more predictive of the degree of fluid leakage. Higher ALT and AST levels seem to be useful in predicting the duration of ascites.

http://dx.doi.org/10.1016/j.ijid.2012.05.227

Type: Poster Presentation

Final Abstract Number: 40.066
Session: Virology and Viral Infections (Non-HIV)
Date: Thursday, June 14, 2012
Time: 12:45-14:15
Room: Poster & Exhibition Area

The epidemiology of hepatitis C virus in Egypt: a systematic review

Y. Mohamoud*, G. Mumtaz, L. Abu-Raddad

Weill Cornell Medical College in Qatar, Doha, Qatar

Background: Egypt has the highest prevalence of hepatitis C virus (HCV) in the world, estimated nationally at 14.7%. This nation has weathered the largest iatrogenic transmission epidemic of blood-borne pathogens in human history during the era of parenteral antischistosomal therapy (PAT). Numerous HCV prevalence studies have published various estimates from different Egyptian communities, suggesting that Egypt, relative to the other nations of the world, might be experiencing intense ongoing HCV transmission. This review's objective was to delineate the evidence on the epidemiology of HCV transmission among the different at risk population groups.

Methods: This was a systematic review following the PRISMA guidelines of all data on HCV transmission in Egypt. Sources of data included PubMed, Embase, international organizations' reports and databases, and country-level reports and databases.

Results: Five studies have measured HCV incidence in Egypt. HCV incidence among village residents ranged between 2.4/1,000 person-years and 5.2/1,000 person-years. On the other hand, 130 studies have measured HCV prevalence among populations at varying levels of risk. Among Egypt's general population, HCV prevalence in pregnant women was as high as 15.8%, and among blood donors it ranged between 9.0% and 24.8%. A national survey recently measured an overall prevalence of 14.7%. Among populations at direct risk of exposure, HCV prevalence was found to be